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June 15, 2016

Mr. Benjamin L. Bradley, Project Scientist
Schnabel Engineering South, PC
11A Oak Branch Drive
Greensboro, NC 27402

Re: Technical Review Comments for Task Order 653SUM Report (Draft)
Edgecombe County Landfill
2759 Colonial Rd, Tarboro, Edgecombe County, NC
ID#: NONCD0000653

Dear Ben:

The Unit has reviewed Schnabel's May 23, 2016 **653SUM** Report (Draft) for the above site in *Edgecombe* County. Enclosed please find the Unit's Technical Review Comments on the draft report. Please revise the 653SUM Report accordingly and re-submit it by June 22, 2016 or sooner.

If you have any question, please contact me at (919) 707-8347, or zi-qiang.chen@ncdenr.gov.
Thanks!

Sincerely,

Ziqiang Chen, PhD, Environmental Engineer II
NCDENR Division of Waste Management



State of North Carolina | Environmental Quality | Waste Management
1646 Mail Service Center | 217 West Jones Street | Raleigh, NC 27699-1646
919 707 8200

Technical Review Comments
On Task Order 653SUM Report (Draft)
Edgecombe County Landfill
2759 Colonial Rd, Tarboro, Edgecombe County, NC
ID#: NONCD0000653

- 1). **General:** Insert page numbers for the body of the text of the Report.
- 2). **Table of Contents:** Insert Latin number (i, ii, iii, iv, etc) for Table of Contents, Tables, Figures, and Acronyms.
- 3). **Page 2, Section 1.0:** Redraft the entire section, using precise verbiage and structure as presented in the *RI Summary Report Template* (attached at the end of the Comments).
- 4). **Page 2, Section 3.0:** Follow the *Template* closely, trim the text of this section, and summarize the central concern of this Section, namely, if there are naturally occurring inorganics in the media of the site?
- 5). **Page 3, Section 4.0:** Follow the *Template* closely, address each of the appropriate issues designated in this Section of the report, such as the estimated volume of the waste, are there waste types to require special management and disposal...
- 6). **Pages 3-6, Section 5.0, Media Characterization, Figures 5-7 and 9, Tables 1-6:** Delete the column of "GW PSRG", the naturally occurring inorganics (such as Fe, Mn, As(?), etc), and the inorganics whose concentrations are below those of the Residential PSRGs from **Figures 5, 6,7, and 9**, and from **Tables 1-6**.
- 7). **Page 4, Figures 5 and 6:** Remove the columns of "GW PSRG", the naturally occurring inorganics [Fe, Mn, and including arsenic (As) when 4.5ppm for average concentration of arsenic is applied as referenced on Page 4, 1st paragraph of the draft report], and the inorganics whose concentrations are below those of the Residential PSRGs from both the text and the Figure.
- 8). **Page 6, References:** Insert the missing reference by Hardy, Myers and Stokes (2008).
- 9). **Page 6, References:** Insert the missing reference "*Remedial Investigation - VOC Profile of The Western Edge of Site, and Surface Water and Sediment Sampling and Analysis*" by Schnabel Engineering (2016).

----- The end -----

REMEDIAL INVESTIGATION SUMMARY REPORT

[SITE NAME]

{SITE CITY}, [SITE COUNTY], North Carolina

ID No. [SITE ID]

State Contract No. N1####S

Task Order [TASK ORDER NUMBER]

Prepared By:

Submitted To:

**North Carolina Department of Environment
and Natural Resources**

Division of Waste Management

Inactive Hazardous Sites Branch

Superfund Section

Pre-Regulatory Landfill Unit

1646 Mail Service Center

Raleigh, North Carolina 27699-1646

Prepared By:

[COMPANY NAME, ADDRESS, LOGO]

[DATE]

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ACRONYMS

1.0 INTRODUCTION

- State the purpose of the report: this report provides an executive summary of the remedial investigation.
- Include the name of the site, ID Number, site location, site size (in acres), number of parcels and parcel IDs containing waste and/or affected media (ie, the Site).
- Include general information regarding historic use. Provide available specific waste information and whether it poses a risk or affects an identified receptor.
- Include current site use, site access, cover vegetation, surface water, on-site structures and utilities. Include current zoning and water supply information for the site and site vicinity. If relevant, briefly explain the contribution or potential of contamination from another site/source.
- Include a site vicinity map showing the site location on a USGS topographic map.

2.0 SENSITIVE ENVIRONMENTS

Were sensitive environments identified at the Site? If not, state “No sensitive environments were identified in the site vicinity.” If so, identify them here. Any special details associated with the sensitive environments identified that require consideration for the remedy? If so, state.

3.0 GEOLOGY AND HYDROGEOLOGY

Provide local/regional geologic and hydrogeologic conditions. Discuss naturally occurring inorganics in soil and groundwater and other naturally occurring area conditions. Provide reference information (literature, health department, web site, etc.) about naturally occurring conditions in the area that includes range of concentration for each.

4.0 WASTE DISPOSAL AREA

This section serves to identify waste and physical hazards present at the site.

- Is surface waste present at the site? If so, what types (list tires and white goods separately)? What is the estimated volume? Where is it located? Include a figure delineating surface waste. If no surface waste is present, omit this section.
- Is partially buried waste present at the site? If so, what types? What is the estimated volume of this waste? Where is it located? If all waste at the Site is surface or buried waste, omit this section.
- Is buried waste present at the site? If considering waste removal (generally less than 40,000 cubic yards), what is the estimated volume of waste for each affected parcel? Are there any waste types that require special management and disposal (asbestos, contaminated materials requiring removal)? Where is it located? If there is no buried waste, omit this section.
- Include a figure showing the waste disposal area using all past investigation results to depict a final waste limits area. All figures should include grayscale topographic contours, property boundaries, a North arrow and a legend with an explanation of symbols.
- What other physical risks are posed by waste at the site? Are there steep slopes? If steep slopes or other risks are present, identify them on the waste disposal area figure.
- What is the range of soil cover thickness across the waste disposal area? If less than 18" of cover is present use shading to identify deficient areas on a soil cover thickness map.

5.0 MEDIA CHARACTERIZATION

This section serves to summarize the relationship of contaminants in all media investigated.

Include an investigation map that identifies all borings, all well locations and surface/sediment sampling locations.

If contaminants (including daughter products) were identified in concentrations that may require additional cleanup then provide the necessary figures (by media type) to identify those area(s) (points of contaminant and/or iso-concentrations).

5.1 Soil and Sediment Characterization

5.1.1 Soil and Sediment Remedial Goals

Include the statement: "Soil and sediment analytical results were initially compared to the Preliminary Soil Remediation Goals (PSRGs) established by the North Carolina Inactive Hazardous Sites Branch (IHSB)."

Select the applicable of the following statements (note this will not address every condition):

- If no SRGs are established at sites with less than 40,000 cubic yards and anticipate removal of waste, then only use background/naturally occurring inorganics in the evaluation.

- If no site specific SRGs are required at sites where there is greater than 40,000 cubic yards of disposed waste state “An evaluation of analytical results for soil and sediment was completed that meet remedial goals for a containment remedy.”
- If site specific SRGs have been calculated for this site, the following language is required:
 “Remediation goals are established in a manner consistent with applicable standards. The following site specific health based SRGs include the following:” List SRGs.

5.1.2 Soil Sampling

- Were background soil samples collected? If so, state the number. Identify naturally occurring analytes that exceed (P)SRGs.
- Are analytes exceeding (P)SRGs attributed to anthropogenic or naturally occurring background conditions? If so, briefly explain. If not, omit this section.
- Provide the number of cover soil samples.
- Were analytes exceeding (P)SRGs detected in cover soil samples? (As needed, explain or do not include naturally occurring analytes and/or values below SRGs.) If so, which analytes? Include a figure and table identifying only those analytes exceeding (P)SRGs. If no exceedances (adjusted for naturally occurring inorganics or health-based averaged goals) were detected in cover soil samples, omit this section.
- Provide the number of soil/waste samples.
- Were analytes exceeding (P)SRGs detected in subsurface soil/waste samples? If so, which analytes? Include a figure and table identifying only those analytes exceeding (P)SRGs exclude naturally occurring inorganics or (P)SRGs. If no exceedances were detected in subsurface soil samples, omit this section.

5.1.3 Sediment Sampling

- Provide the number of sampling locations.
- Were analytes exceeding (P)SRGs detected in sediment samples? (As needed, explain or do not include naturally occurring analytes and/or values below SRGs.) If so, which analytes? Include a figure and table identifying only those analytes exceeding (P)SRGs excluding naturally occurring inorganics. If no exceedances were detected in sediment samples, omit this section.

5.2 Water Characterization

5.2.1 Groundwater

- Provide the number of groundwater wells.
- What is the depth-to-groundwater at the site? What is the groundwater flow direction? Include a groundwater flow direction map.
- Groundwater analytical results are compared to North Carolina's 15A NCAC 02L.0202 Groundwater Quality Standards.
 - If there were no exceedances add the following statement, "No exceedances were detected in groundwater."
 - If analytes exceed applicable standards in on-site groundwater state "The following analytes exceed the 2L standard; list analytes." Include a groundwater concentration map and table identifying only those analytes exceeding applicable standards.
 - If exceedances are due to naturally occurring conditions, explain.

5.2.2 Surface Water and Seeps

Surface water results are compared to applicable North Carolina's 15A NCAC 2B.0200 Surface Waters and Wetlands Standards.

- Provide the number of sampling locations.

If no exceedances were detected in surface water samples and on-site seeps state "No exceedances were detected in surface water samples and on-site seeps."

- Were analytes exceeding applicable standards detected in surface water samples? If so, which analytes? Include a figure and table identifying only analytes exceeding applicable standards. If no exceedances were detected, omit.
- Were analytes exceeding applicable standards detected in seeps? If so, which analytes? Include a figure and table identifying only those analytes exceeding applicable standards. If no exceedances were detected in on-site seeps, omit this section.
- If exceedances are due to naturally occurring conditions, explain.

5.2.3 Potable Water Supply

If no potable wells were sampled, omit this section.

- Otherwise provide the number of potable wells sampled. How frequent? Include a figure of the potable water supply well location(s).
- Use the following language "Groundwater analytical results are compared to the Federal Maximum Contaminant Levels (MCLs), North Carolina's 15A NCAC 02L.0202 Groundwater Quality Standards, and site-specific, health-based concentrations calculated by the IHSB Superfund Section Toxicologist."

- If no exceedances were detected in potable water supply wells, state: “No applicable exceedances were detected in potable water supply wells.”
- Were analytes exceeding applicable standards detected in potable water supply wells (exclude naturally occurring inorganics)? If so, list the analytes. Include a figure and table identifying only those analytes exceeding applicable standards.
- If exceedances are not associated with the landfill, explain.

5.3 Landfill Gas Characterization

- What were the relevant results of the above ground vapor study? Only include results that were used to determine placement of subsurface landfill gas probes. If no landfill gas was identified during the above ground vapor study, state “No landfill gas was detected at the ground surface.”
- Provide the number of landfill gas probes.
- Were gases (and/or vapors) detected while monitoring subsurface gas probes with field instruments? In which gas probes were they detected?
- Which gases (methane, ammonia, hydrogen sulfide) and/or vapors (water, mercury, volatile organic compounds)?
- Were analytes exceeding applicable standards detected in gas samples (TO 15) collected for laboratory analysis? Which analytes? Where were they detected? Include a table and figure identifying only those analytes exceeding applicable standards. If no exceedances were detected during landfill gas screening state “No vapor intrusion potential is present”.
- Are vapor intrusion concerns present at the site? Are exceedances a concern (yes or no) explain reason. Which chemicals are associated with these issues? Include a figure identifying the areas of vapor intrusion concerns. If no vapor intrusion concerns are present at the site, omit.

6.0 REFERENCES

Sole Use Statement

Suggested language: The report was prepared solely for the intended use of NCDENR Inactive Hazardous Sites Branch performed in the scope of work for Task Order_____. Use of this document for other purposes is at the sole risk of the user.

Report Certification